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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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EXAMINER

CHAWAN, SHEELA C

ART UNIT	PAPER NUMBER
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2625

DATE MAILED: 05/20/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/848,953

Applicant(s)

HICKERSON ET AL.

Examiner

Sheela C Chawan

Art Unit

2625

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 03 May 2001.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-69 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-69 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 5/3/01 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

DETAILED ACTION

Drawings

1. The Examiner has approved drawings filed on 5/3/01.

Claim Rejections - 35 USC § 112

2. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter, which the applicant regards as his invention.

Claims 1, 24 and 47, are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

In claim 1, line 7, " second data item " there is no mention of first data item before second data item, as recited vague and unclear.

In claim 24, line 4, " second data item " there is no mention of first data item before second data item, as recited vague and unclear.

In claim 47, line 7, " second data item " there is no mention of first data item before second data item, as recited vague and unclear. Please explain.

Claim Rejections - 35 U.S.C. § 102

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless --

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the

Art Unit: 2625

invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

Claims 1, 2, 24-25, 47 and 48 are rejected under 35 U.S.C. 102(e) as being anticipated by Cok (US.6,298,154 B1).

As to claim 1, Cok discloses a method of translating handwritten input to machine-readable characters comprising:

obtaining a data item (scanner obtaining image of the handwritten text sample column 2, lines 8-9); and

performing one or more recognition processing operations (fig 1, item 24, optical character recognition, column 3, lines 39- 47, column 4, lines 10- 33) upon said data item by a special purpose hardware unit (fig 1, item 12 a scanner corresponds to special purpose hardware unit) to produce a second data item (fig 1, computer with CPU fig 1, item column 3, lines 32- 47, fig 3, item 50, column 4, lines 34 - 65, note second data item corresponds to a digital image of a normative handwritten sample).

As to claims 2, 25 and 48, Cok discloses the method of claim 1 wherein said data item is a handwritten symbol (fig 4,5 and 6).

As to claim 24, see the rejection of claim 1, above.

As to claim 47, see the rejection of claim 1, above.

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(f) or (g) prior art under 35 U.S.C. 103(a).

Claims 3 -15, 20-23, 26-38, 43-46, 49- 61, 66-69, are rejected under 35 U.S.C. 103(a) as being unpatentable over Cok (US.6,298,154 B1), as applied to claims 1, 2, 24-25, 47 and 48 above and further in view of Shustorovich et al. (US. 5,542,006).

Regarding claims 3, 26 and 49, Cok discloses a method for rendering improved personal handwriting. Cok is silent about specifics details of altering a data item by a preprocessor to reduce form.

Shustorovich discloses a neural network based character position detector for use in optical character recognition. The system comprises of :

altering (note, altering is like filtering the data in the reduce form, column 9, lines 1-16) said first data item by a preprocessor (fig 10, item 1030, corresponds to preprocessor) to a reduced form (column 6, lines 27- 47, column 9, lines 1-16).

Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to modify Cok to include altering a data item by a preprocessor to reduce form. It would have been obvious to one of ordinary skill in the art at the time of the invention to modify Cok by the teaching of Shustorovich in order to remove or reduce the artifacts in characters recognition, (as suggested by Shustorovich at column 15, lines 49 – 51).

As to claims 4, 27 and 50, Shustorovich discloses the method wherein said step of altering is fully information preserving (note, altering is like filtering the data in the reduce form, to preserve the information, column 6, lines 27- 47, column 9, lines 1-16).

As to claims 5, 28 and 51, Shustorovich discloses the method further comprising: selecting one or more machine readable characters by a postprocessor (column 5, lines 52-61, fig 1, item 156 and 170).

As to claims 6, 29 and 52, Shustorovich discloses the method wherein said special purpose hardware unit is configured to perform a first recognition processing operation (column 6, lines 27- 47) and a second recognition processing operation (column 6, lines 48- 57) in parallel (column 2, lines 5-13).

Art Unit: 2625

As to claims 7, 30 and 53, Shustorovich discloses the method wherein said special hardware unit is configured to perform hidden Markov model computations (column 5, lines 48- 61).

As to claims 8 and 31, Shustorovich discloses the method wherein said special purpose hardware unit comprises:

a memory unit (fig 1, item 152 and 165, column 4, lines 34 – 35).

As to claims 9, 32 and 55, Shustorovich discloses the method further comprising: presenting said machine readable characters to a user (column 1, lines 59- 67).

As to claims 10, 33 and 56, Shustorovich discloses the method further comprising:

obtaining an indication from said user of whether said machine readable characters are a correct translation of said data item (column 1, lines 59- 67).

As to claims 11, 34, 54 and 57, Shustorovich discloses the method wherein said data item is a combination of a plurality of handwritten symbols (fig 3A, column 1, lines 59- 67).

As to claims 12, 35 and 58, Shustorovich discloses the method further comprising:

adjusting the operation of said special purpose hardware unit in accordance with a set of training data (column 4, lines 34 - 42).

As to claims 13, 36 and 59, Shustorovich discloses the method further comprising:

Art Unit: 2625

adjusting the operation of said preprocessor (column 5, lines 8-12) in accordance with a set of training data (column 4, lines 34- 42).

As to claims 14, 37 and 60, Shustorovich discloses the method further comprising:

adjusting the operation of said postprocessor (column 6, lines 50 –57) in accordance with a set of training data (column 4, lines 43 - 48).

As to claims 15, 38 and 61, Shustorovich discloses the method wherein said step of selecting comprises:

determining a context of said data item (column 1, lines 59- 67).

As to claims 21, 44 and 67, Shustorovich discloses the method wherein said hidden Markov model operations are forward probability calculations (column 16, line 6 through column 17, lines 1-13).

As to claims 22, 45 and 68, Shustorovich discloses the method wherein said hidden Markov model operations are backward probability calculations (column 16, line 6 through column 17, lines 1-13).

As to claims 23, 46 and 69, Shustorovich discloses the method of wherein one or more wordlets are part of a symbol alphabet (column 2, lines 45- 57).

As to claim 20, claim 20 recites similar limitation as claim 1 above and similarly analyzed except for the step of a performing one or more hidden Markov model operations upon said data item as taught by Shustorovich (column 5, lines 48- 60).

Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to modify Cok to include one or more hidden Markov model. It would have

Art Unit: 2625

been obvious to one of ordinary skill in the art at the time of the invention to modify Cok by the teaching of Shustorovich in order to provide fast and often surprisingly good output approximations results, (as suggested by Shustorovich at column 2, lines 9- 13).

As to claim 43, see the rejection of claim 20, above.

As to claim 66, see the rejection of claim 20, above.

5. Claims 16 –19, 39-42 and 62-65 are rejected under 35 U.S.C. 103(a) as being unpatentable over Cok (US.6, 298,154 B1), in view of Shustorovich et al. (US. 5,542,006), as applied to the claims 1-15, 20-38,43-61, and 66-69 above and further in view of Friend et al. (US. 5,455,901).

Regarding claims 16, 39 and 62, Cok discloses a method for rendering improved personal handwriting. Cok is silent about specifics details of determining a correctly spelled word wherein said machine readable characters appear in said correctly spelled word and said correctly spelled word is appropriate for said context.

Friend discloses an input device which is related to the field of handwritten data entry in computer system and it ability to translate original handwritten strokes of ink or blocks of ink into machine-readable words or characters for display. The system comprises of:

determining a correctly spelled word wherein said machine readable characters appear in said correctly spelled word and said correctly spelled word is appropriate for said context (column 2, lines 1- 37, column 6, lines 56- 67, column 7, lines 14- 47, column 9, lines 6- 15). Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to have modified Cok to determine a correctly

Art Unit: 2625

spelled word wherein said machine readable characters appear in said correctly spelled word and said correctly spelled word is appropriate for said context. It would have been obvious to one of ordinary skill in the art at the time of the invention to have modified Cok by the teaching of Friend in order to provide an improved data entry for handwriting entry computer system by disabling the automatic display of a translation of the entered data, (as suggested by Friend at column 4, lines 9- 11).

As to claims 17, 40 and 63, Friend discloses the method wherein said step of selecting further comprises:

determining whether machine readable characters are grammatically incorrect for said context (column 2, lines 1- 37, column 6, lines 56- 67, column 7, lines 14- 47, column 9, lines 6- 15).

As to claims 18, 41 and 64, Friend discloses the method of claim 15 wherein said step of selecting further comprises:

determining a word in which said machine readable characters appear in said word and said word appeared previously in said context (column 6, lines 56- 67, column 7, lines 1 - 47).

As to claims 19, 42 and 65, Friend discloses the method of claim 15 wherein said step of selecting further comprises:

examining a set of user information (column 7, lines 31- 47).

Other prior art cited

6. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Kopec et al. (US.5,883,986) discloses a method and system for automatic transcription correction.

Gaborski et al. (US.5,442,715) discloses method and apparatus for cursive script recognition.

Poon et al. (US.5,687,254) discloses searching and matching unrecognized handwriting.

Errico et al. (US. 5,854,855) discloses method and system using metaclasses and polynomial discriminant functions for handwriting recognition.

Basehore (US.5,802,204) discloses handwritten character translator using fuzzy logic.

Contact Information

7. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Sheela C Chawan whose telephone number is 703-305-4876. The examiner can normally be reached on Monday - Thursday 6 - 7.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Bhavesh Mehta can be reached on 703-308-5246. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Sce

Sheela Chawan
Patent Examiner
Group Art Unit 2625
May 14, 2004

J K Patel

Jayanti K. Patel
Primary Examiner